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Report to the Chairman, Committee on Interior and Insular Affairs, House of Representatives

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SURFACE MINING

Interior Is Acting to Improve Its Applicant Violator System

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June 22, 1990

The Honorable Morris K. Udall
Chairman, Committee on Interior
and Insular Affairs
House of Representatives

Dear Mr. Chairman:

Your June 27, 1989, letter requested that we evaluate what the Office of Surface Mining Reclamation and Enforcement (OSMRE) has done in response to our report entitled Surface Mining: Operation of the Applicant Violator System Can Be Improved (GAO/AFMD-89-31, January 24, 1989). This letter provides a summary of actions taken by OSMRE since the completion of our last review and also provides information on the preliminary Department of the Interior-National Wildlife Federation agreement for improving the permit review process.

Results in Brief

OSMRE initiated a number of actions to improve the permit review process, some of which have not yet been completed. While we see progress, the Applicant Violator System (AVS) still is not reliable for determining whether applicants should be issued coal mining permits. Although the system's accuracy rate increased from 54 percent at the time of our last review to 63 percent for the first 10 months of 1989, the present accuracy rate still necessitates manual verification. To address the data accuracy problem, OSMRE implemented a redesigned system on May 1, 1990. While we did not assess the system, we were told that preliminary results of the first 2 weeks of its operations showed a 77-percent accuracy rate.

Subsequent to completion of our review work, a preliminary legal agreement was reached between the Department of the Interior and the National Wildlife Federation. (See appendix I.) The agreement called for various improvements to the permit review process. It has not yet been approved by the cognizant court.

Background

The Congress enacted the Surface Mining Control and Reclamation Act of 1977 to protect society and the environment from the adverse effects of surface coal mining operations. Section 510, a key provision of the act, requires denial of mining permits to applicants who have outstanding violations of mining regulations unless the applicant submits

proof, to the satisfaction of the regulatory authority, that the violation has been or is in the process of being corrected.

Interior has been criticized in GAO and congressional committee reports for not fulfilling this legislative mandate. A list of our prior reports is on the last page of this report. In addition, a 1985 court order provided for more effective implementation of the congressional mandate. In response, OSMRE developed the Applicant Violator System which is designed to link current applicants to outstanding violations, thus forming a basis for recommending permit issuance or denial.

In a January 1989 report, we discussed fundamental problems we had identified in the system's operations. The report said that subsequent manual verifications by OSMRE had reversed 46 percent of the AVS-generated recommendations. The high reversal rate was due primarily to inadequate and outdated information in the system's data base.

Objectives, Scope, and Methodology

Our objectives were to (1) identify and assess actions taken to improve AVS operations since completion of our previous review work in July 1988, (2) evaluate the system's current ability to generate reliable permit issue and deny recommendations, and (3) provide a description of the legal agreement between Interior and National Wildlife on improving the permit review process.

Our work was conducted in the Washington, D.C., area. We interviewed OSMRE officials to identify actions taken to improve AVS operations and reviewed the records supporting those actions. We reviewed the OSMRE Clearinghouse operations as well as the guidance it provided to the states to clarify their role in the permit process. We also reviewed operating procedures, applications, violation records, and rules governing the issuance of permits.

We reviewed agency statistics regarding the agreement rates between AVS-generated and manually verified recommendations, and an informal OSMRE report on the reasons for invalid AVS recommendations. To determine the system's reliability, we also reviewed a selected judgmental sample of 30 of a total of 526 permit applications processed by the system in June and July 1989. Twenty of these were randomly selected. In order to more fully research the reasons for differing recommendations, the remaining 10 were specifically selected because the AVS and Clearinghouse recommendations disagreed. We discussed the 30 cases

with OSMRE officials and reviewed the documentation used to support its final issue or denial recommendations.

In our earlier report, we recommended that OSMRE compare the AVS and National Wildlife permit review systems to identify improvement opportunities. OSMRE suspended its comparison efforts pending settlement of a lawsuit filed by National Wildlife in April 1989 concerning Interior's enforcement of the act and the operation of AVS. After a preliminary agreement was reached between Interior and National Wildlife on January 24, 1990, OSMRE advised us it plans to study the National Wildlife system. Accordingly, we did not review this issue. As of May 21, 1990, the agreement had not been approved by the U.S. District Court for the District of Columbia, which is responsible for the case. Details are in appendix I. We also did not evaluate a recently implemented redesign of AVS, because system operations began after our review was completed.

We discussed a draft of this report with OSMRE officials to confirm its accuracy and completeness and have incorporated any appropriate comments. We performed our review in accordance with generally accepted government auditing standards.

Actions Taken to Improve Application Processing

OSMRE has taken several actions to improve its permit review process. The major accomplishment was upgrading the data base primarily by adding the Department of Labor's Mine Safety and Health Administration mine identification numbers and, as recommended in our prior report, the Administration's mine ownership and control data. OSMRE also solicited updated ownership and control information from the companies in its data base.

Other actions include eliminating a backlog of unverified AVS-generated recommendations through productivity initiatives and providing more timely recommendations to states. In response to our prior report recommendation, rules defining ownership and control and requiring updating of the information on applications prior to permit issuance have been issued. In addition, OSMRE implemented a redesign of AVS on May 1, 1990.

Details on each of these actions are in appendix II.

AVS Does Not Yet Provide Reliable Recommendations for Issuing Permits

While OSMRE has acted to strengthen AVS, the system is still not producing reliable permit issuance or denial recommendations. Therefore, OSMRE continues to manually verify the AVS-generated recommendations.

During the first 10 months of 1989, the manual verifications agreed with about 63 percent of the AVS-generated recommendations. This was a 9-percent improvement over the agreement rate GAO found during the first 5 months of AVS operations in 1987 and 1988. To address the data accuracy problem, OSMRE implemented a redesigned system on May 1, 1990. While we did not assess the system, we were told that preliminary results of the first 2 weeks of its operations showed a 77-percent accuracy rate.

In addition to continuing data quality problems, we found that a major factor affecting the reliability of AVS recommendations is the large number of incorrect links, i.e., the inability to correctly identify current applicants with outstanding violations. Although OSMRE has not determined what is causing the problem, it stems at least in part from a potential weakness in the AVS computer program.

Appendix III provides a detailed discussion of our analysis of the reliability of AVS recommendations.

Conclusions

OSMRE has acted to improve AVS operations. Nevertheless, data quality problems, combined with a potential programming problem, continue to undermine its initiatives. While the accuracy of AVS-generated recommendations was 9 percent better than during the first 5 months of operation, OSMRE's manual verifications reversed 37 percent of the AVS recommendations between January and October 1989.

OSMRE implemented a redesigned AVS on May 1, 1990. Because system operations were initiated after our review work was completed, we were unable to assess its performance. However, a contractor study completed during November 1989 endorsed the overall redesign concept and recommended several actions OSMRE should take to improve its development and implementation process.

While all of OSMRE's improvement initiatives have merit, the only real measure of success is whether or not they substantially improve the accuracy of the AVS-generated recommendations. In the final analysis, making AVS a dependable performer will be contingent on successfully

upgrading data quality and ensuring that it can accurately link applicants and permittees to outstanding violations. OSMRE believes that the revisions made to the system during its recent redesign project will improve its effectiveness and efficiency.

Since (1) following the completion of our review, OSMRE implemented a redesigned AVS and (2) the legal agreement between National Wildlife and Interior has not yet been approved by the Court, we are not making any recommendations at this time.

As agreed with your office, unless you publicly announce the contents of this report earlier, we will not distribute it until 30 days from its date. At that time, we will send copies of the report to the Secretary of the Interior, the Department of the Interior's Director of the Office of Surface Mining Reclamation and Enforcement, and other interested parties. We will also make copies available to others upon request.

Please contact me on 275-9454 if you or your staff have any questions. Major contributors to this report are listed in appendix IV.

Sincerely yours,

Jeffrey C. Steinhoff
Director, Financial Management
Systems and Audit Oversight

Contents

Letter		1
Appendix I Preliminary Interior-National Wildlife Agreement on AVS		8
Appendix II OSMRE Actions to Improve Application Processing		9
Appendix III Analysis of the Reliability of AVS		14
Appendix IV Major Contributors to This Report		17
Tables	Table II.1: Company Profile Project—Status as of December 31, 1989	11
	Table III.1: AVS and Clearinghouse Recommendation Agreement Rates, 10-Month Period Ending October 31, 1989	14
Related GAO Products		20

Abbreviations

AVS	Applicant Violator System
GAO	General Accounting Office
OSMRE	Office of Surface Mining Reclamation and Enforcement

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Preliminary Interior-National Wildlife Agreement on AVS

On January 24, 1990, a preliminary agreement was reached between Interior and National Wildlife. In exchange for National Wildlife dropping its legal action against Interior over enforcement of the surface mining law, Interior agreed to major changes to AVS. As of May 21, 1990, the agreement had not been approved by the U.S. District Court for the District of Columbia.

The preliminary agreement calls for OSMRE to

- complete, correct, and refine the AVS data base of potential ownership and control links between permit applicants and violators;
- interface with data bases maintained by the Mine Safety and Health Administration, the Energy Information Administration, and the states;
- augment and verify AVS data by reviewing federal inspection and legal files, company records, and audit information and by conducting field investigations;
- formalize agreements with state surface mine regulators on screening permit applicants and verifying AVS information;
- work with the Tennessee Valley Authority to block purchase of coal from violators of the surface mining law;
- review permits already in force, and suspend or revoke any that should not have been issued because of uncorrected violations or ownership and control links with violators;
- propose formal sanctions against people who intentionally give incomplete or incorrect ownership and control information on coal mine permit applications; and
- develop standards, through rule-making if necessary, for determining how AVS ownership and control links may be judged erroneous and for updating ownership and control information.

OSMRE Actions to Improve Application Processing

The System's Data Base Has Been Upgraded

In our January 1989 report, we stated that OSMRE had not incorporated all of the relevant sources of mine ownership and control information into AVS. Instead, Mine Safety and Health Administration data was obtained by the Clearinghouse during its manual verification process. Thus, we recommended that data sources, including the Administration, used during the manual verification process should be incorporated into AVS to improve the quality of the data available for the system-generated recommendations.

OSMRE has acted to upgrade AVS, including entering Administration information into the AVS data base. The information added includes more Administration identification numbers that the Administration assigns to each mining activity and the related information regarding who owned or controlled the mine activities on specific dates. It also requested the 22,000 applicants and permittees in its data base to voluntarily provide current data for updating the AVS data.

Administration Numbers

A March 1988 review of the AVS data base by OSMRE disclosed that only 5,000 of about 18,500 valid permits, or 27 percent, had Administration identification numbers. Because these numbers facilitate matching applicants to violators, OSMRE tried to obtain additional numbers which would be incorporated in the system's data base. At the conclusion of that effort, 16,228, or 88 percent, of the permits in the AVS data base had Administration numbers.

Mine Ownership and Control Data

Administration mine ownership and control information is now being entered in AVS, thereby improving the system's ability to link applicants to violators. However, its usefulness is somewhat diminished because OSMRE has been slow in entering updated quarterly data.

During our previous review, we found that the Administration ownership and control data was obtained and used by OSMRE during its manual verification process. As recommended in our prior report, OSMRE has incorporated Administration data in the AVS data base. This data, which the Labor Department requires to be updated quarterly, includes the dates that each owner, operator, and controller relationship existed. Such information enables AVS to determine who owned or controlled the violator at the time of the violation and thereby permits links of applicants to violators. At the conclusion of our prior review, OSMRE informed us that it planned to enter the ownership and control data into AVS soon. In April 1989, OSMRE entered the data as of October 1988 into AVS. While

OSMRE has continued to enter the quarterly updates it receives from the Administration, it has not done so promptly. For example, the September 1989 quarterly data was not entered until January 5, 1990.

Company Profile Project

In another effort to improve the quality of AVS data, OSMRE initiated a onetime "Company Profile" project in May 1988 to update the information it had on the 22,000 applicants and permittees in its data base. However, as of December 1989, only 3,181 of 8,452 responses received have been reviewed for updating the AVS data base.

The 22,000 applicants and permittees were provided copies of the current ownership and control information in the AVS data base. The recipients were requested to voluntarily update and correct the information and return it with supporting documentation by June 1, 1988. As of December 31, 1989, OSMRE had received 8,452 responses.

OSMRE forwarded the 8,452 responses as they were received to the state regulatory authorities and instructed them to review and enter the changes in AVS. OSMRE officials advised us that, as of December 31, 1989, the states had reviewed 3,181, or 38 percent, of the 8,452 responses to update the AVS data base. However, as table II.1 shows, the degree of participation varies significantly. Some states processed all the responses, while others have processed few, if any. For example, while 4,253 responses were received from companies operating in Kentucky and Pennsylvania, only 10 have been used by the two states to update the AVS data base. OSMRE officials advised us that Kentucky updated AVS using its own ownership and control data base rather than the company-provided data. It attributed the slow progress in Pennsylvania to limited staffing but noted that a data entry staff member had been subsequently added by the state to its AVS support staff.

Table II.1: Company Profile Project—Status as of December 31, 1989

State or federal field office	Responses received	Responses processed	Percent processed
Alabama	190	170	89.5
Arizona	11	10	90.9
Colorado	30	20	66.7
Iowa	1	1	100.0
Illinois	146	127	87.0
Indiana	121	82	67.8
Kansas	6	5	83.3
Kentucky	2,728	0	0.0
Louisiana	1	0	0.0
Missouri	68	63	92.7
Maryland	84	77	91.7
Montana	35	0	0.0
North Dakota	34	34	100.0
New Mexico	7	0	0.0
Ohio	587	540	92.0
Oklahoma	75	66	88.0
OSMRE Western Field Office	55	21	38.2
Pennsylvania	1,525	10	0.7
Tennessee and OSMRE Eastern Field Office	208	4	1.9
Texas	3	3	100.0
Utah	20	20	100.0
Virginia	612	204	33.3
West Virginia	1,851	1,695	91.6
Wyoming	54	29	53.7
Total	**8,452**	**3,181**	**37.6**

Clearinghouse Backlog Eliminated and Verifications Expedited

In our prior report, we noted that many of the manually verified recommendations had not been communicated to states in time to meet their planned permit issuance date. The Clearinghouse, a unit within OSMRE's Division of Debt Management, is responsible for performing the manual verifications.

Our current work showed that the manual verification process has been streamlined. In October 1988, the Clearinghouse revised its manual verification process and was able to eliminate a backlog of 1400 unverified AVS-generated recommendations by December 1988. OSMRE officials told

us that it would have taken 9 months to eliminate the verification backlog if OSMRE had not revised its procedures.

While manual verifications of all AVS-generated recommendations are still being performed, the current process makes more efficient use of existing data, thus reducing redundant research. Since our January 1989 report, the Clearinghouse has changed its verification process by reviewing applications from the same or related companies as one submission rather than as individual submissions. In addition, the Clearinghouse began to use the information it had accumulated on those applicants who had submitted previous applications rather than to completely redo all research from scratch.

Reducing its redundant manual research has enabled the Clearinghouse to provide more prompt recommendations to the states. During our review, the Clearinghouse recommendations were being provided to the states within an average of 1 week after the AVS-generated recommendation. The revised procedures have also enabled the Clearinghouse to phase out 16 contractor personnel.

Status of Operating Rules and Procedures

In our January 1989 report, we stated that OSMRE had not defined several critical data requirements or the roles and responsibilities of the system operators and users. In the report, we recommended that OSMRE expedite issuance of the Clearinghouse procedures and a rule for updating applicant information prior to permit issuance. We also called for monitoring state adherence to the recently issued ownership and control rule and the information update rule when it was published.

OSMRE has published three new permit issuance rules, notified the states and federal field offices of the new rules, and requested and received the proposed amendments to their OSMRE-approved programs. No date has been established for issuance of the Clearinghouse procedures. The current draft procedures will have to be modified due to the recent redesign of AVS and the Interior-National Wildlife preliminary agreement.

Redesign of AVS

OSMRE implemented a redesign of AVS on May 1, 1990. Redesign of the system was completed in September 1989, and testing began in January 1990. Major features of the system include:

- States will have on-line system access, thereby allowing them to make permit issuance or denial decisions.

- The two basic files within the system's data base will be an entity directory and a violation file with related entities.
- Changes in the automated operations will reduce the system processing time needed to establish business relationships between mining entities before matching to the violator file.
- Quarterly updated Administration data will be accessible by users but will no longer be used to link applicants and violators.

OSMRE officials believe that the revised system will permit quicker user access and reduce computer processing costs and time. Also, they believe that the redesigned system will eliminate the need for the Clearinghouse to manually verify the system-generated recommendations.

Because OSMRE had retained a consultant to assess the redesign effort and system operations had not started prior to the completion of our work, we did not attempt to evaluate the redesign.

Contractor Study of the Redesigned AVS

OSMRE awarded a contract in September 1989 to Data Computer Corporation of America to perform an in-depth analysis of AVS and the National Wildlife permit review system. The analysis of the National Wildlife system was subsequently suspended until Interior-National Wildlife negotiations to resolve the issues in a lawsuit filed by National Wildlife in April 1989 were completed. National Wildlife and Interior reached a preliminary agreement on the lawsuit in late January 1990. OSMRE advised us that it plans to initiate a study of the National Wildlife system in June 1990. (See appendix I.)

Data Computer Corporation of America subsequently awarded a contract to Computech to assess the AVS redesign. Computech's report, which was issued on November 6, 1989, said that, although it had found some problems, the redesign effort presented a logical, cohesive concept for improving AVS and concluded that OSMRE should proceed.

Analysis of the Reliability of AVS

In our January 1989 report, we stated that inaccurate and incomplete information prevented AVS from producing reliable permit issue and deny recommendations. At that time, we reported that, from the time of its implementation in October 1987 through March 3, 1988, about 46 percent of the AVS recommendations were reversed after they were manually verified by the Clearinghouse.

To assess the current reliability of AVS, we compared the agreement rate of the automated system output and the manual verifications for the 10-month period ending October 31, 1989. As shown in table III.1, the agreement rate, which fluctuated from a high of 88 percent to a low of 50 percent, averaged about 63 percent.

Table III.1: AVS and Clearinghouse Recommendation Agreement Rates, 10-Month Period Ending October 31, 1989

Month	Percentage of recommendations that agreed
January	88.4
February	73.3
March	73.5
April and May (OSMRE combined data)	50.2
June	64.8
July	62.9
August	65.1
September	69.6
October	62.8
Percentage for 10-month period	63.4

Preliminary results of the first 2 weeks of operation of the redesigned AVS showed a 77 percent accuracy rate.

Reasons for Differences

As part of its efforts to improve AVS operations, OSMRE reviews the monthly AVS and Clearinghouse agreement rate to identify operational trends and results. Based on these reviews, OSMRE has identified several overall reasons for the continuing differences between AVS-generated recommendations and the Clearinghouse manual verifications. The differences are primarily the result of renewal application submissions which contain outdated information; information obtained by the Clearinghouse after the applications have been entered into AVS; and Clearinghouse conditional approval recommendations. Finally, GAO and OSMRE reviews disclosed that AVS may have a programming problem that

precludes proper processing of the crucial Administration ownership and control data.

In addition, OSMRE officials told us that the primary reasons for the sharp drop in the agreement rates during April and May 1989 were the following:

- Between February and June 1989, one state submitted a large number of renewal requests in addition to new permit applications. The renewals contained large amounts of inaccurate data.
- In April 1989, Administration ownership and control information was incorporated in the AVS data base, which significantly expanded the information available for linking applicants to violators. In so doing, some of the data led to incorrect linkages.

Finally, only the Clearinghouse staff is able to recommend that a permit be issued conditionally. It can do this based on its research indicating that an outstanding debt payment plan has been established or a settlement agreement is in place for the correction of an outstanding violation. AVS does not have access to this information and accordingly would recommend denial based on an outstanding violation. Our review disclosed that over the 10 months ended October 31, 1989, the conditional issuance category reduced the agreement rate by about 6 percent.

System Processing Problems

An OSMRE analysis and our test of AVS operations has identified automated system programming problems. These problems have caused incorrect linking of applicants to outstanding violations, thus reducing the accuracy of the AVS-generated recommendations.

We selected a sample of 30 AVS recommendations to assess the reliability of the AVS operation. Our test identified 11 cases in which AVS made incorrect links between applicants and outstanding violations. For six cases, the Clearinghouse advised us that the incorrect linkages were caused by the system's inability to accurately read the Administration identification numbers and ownership and control data. However, the Clearinghouse could not pinpoint the exact cause for the incorrect linkages.

The Clearinghouse staff offered more specific causes for the other five cases. These incorrect linkages appeared to be due to problems in AVS identifying starting and ending dates for when specific individuals or companies owned or controlled specific mining operations. During our

detailed discussions with Clearinghouse staff on these five cases, they pointed out instances where the owner or operator of a mine had changed. As discussed earlier, Administration numbers identify the mine, not those operating or controlling it. Because the Administration ownership and control data showed that the current applicant was not involved at the time of the violation, the Clearinghouse staff concluded there was no basis for the system-generated recommendation to deny the permit and, accordingly, reversed it. Unless the system can precisely read and process information reflecting periods of mine ownership and control, any weaknesses in this ability to process Administration data increases the risk of arriving at the wrong decision.

In June 1989, Clearinghouse officials conducted an informal review of applications received in April and May in which the AVS and Clearinghouse recommendations disagreed. Of the 479 cases where the recommendations disagreed, the Clearinghouse determined that incorrect links of applicants to violators caused about 400 disagreements. Clearinghouse personnel said that the incorrect links were due to AVS computer program logic problems, renewal applications with old data, and other reasons. They said that about half of the 400 disagreements were probably attributable to weaknesses related to AVS's use of ownership and control data, including the incorrect reading of ownership periods.

Because the Clearinghouse could not identify the exact cause for the incorrect links, in June 1989, it initiated an effort to determine why AVS is making the incorrect links of applicants to violators and to make appropriate modifications. OSMRE shortly thereafter deferred further analysis until receipt of renewal applications had decreased and current Administration ownership and control information had been entered into the system. As of the completion of our review, the analysis had not been resumed, even though AVS continued to experience the same problems.

Major Contributors to This Report

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Related GAO Products

Debt Collection: Interior Is Acting to Improve Its Collection of Civil Penalty Fees (GAO/AFMD-89-73, August 16, 1989).

Surface Mining: Operation of the Applicant Violator System Can Be Improved (GAO/AFMD-89-31, January 24, 1989).

Debt Collection: Interior's Efforts to Collect Delinquent Royalties, Fines, and Assessments (GAO/AFMD-87-21BR, June 18, 1987).

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